Amendments to the Claims:

1. (Currently Amended) A closed-loop optical network system comprising:

a multi-mode network bus for transmitting a plurality of optical signals;

a multiplexer capable of wavelength division multiplexing a plurality of input optical signals for transmission via the network bus, wherein the plurality of input optical signals have a plurality of predetermined optical wavelengths;

a plurality of ~~remote devices~~ add/drop multiplexers optically connected to the network bus and a plurality of remote devices, wherein said plurality of remote devices are capable of reading optical signals having respective predefined optical wavelengths off of the network bus via respective add/drop multiplexers, ~~and~~ wherein said plurality of remote devices are further capable of writing optical signals having respective predefined optical wavelengths onto the network bus via respective add/drop multiplexers, and wherein at least one of the add/drop multiplexers is assigned an optical wavelength that differs from the optical wavelength assigned to any other add/drop multiplexer; and

a demultiplexer capable of receiving optical signals having at least one of the plurality of predetermined optical wavelengths from the network bus and thereafter wavelength division demultiplexing the optical signals into a plurality of output optical signals.

2. (Original) A closed-loop optical network system according to Claim 1 further comprising a plurality of optical sources capable of generating the plurality of input optical signals from a plurality of input electrical signals.

3. (Original) A closed-loop optical network system according to Claim 2 further comprising a network controller for controlling communications on the network bus, wherein said network controller is capable of transmitting the plurality of input electrical signals to said plurality of optical sources.

4. (Original) A closed-loop optical network system according to Claim 1 further comprising a plurality of optical detectors capable of receiving the plurality of output optical

signals from said demultiplexer and thereafter generating a plurality of output electrical signals from the plurality of output optical signals.

5. (Original) A closed-loop optical network system according to Claim 4, wherein said plurality of optical detectors are capable of transmitting the plurality of output electrical signals to a network controller.

6. (Original) A closed-loop optical network system according to Claim 1, wherein said plurality of remote devices read and write optical signals having respective predefined optical wavelengths that are at least subsets of the plurality of predetermined optical wavelengths of the optical input signals.

7. (Currently Amended) A transceiver for transmitting input optical signals to and receiving output optical signals from a plurality of remote devices via a multi-mode network bus in a closed-loop optical network system, said transceiver comprising:

a plurality of optical sources capable of generating the plurality of input optical signals from a plurality of input electrical signals;

a multiplexer capable of wavelength division multiplexing a plurality of input optical signals for transmission via the network bus, wherein the plurality of input optical signals have a plurality of predetermined optical wavelengths that are selectively received by respective remote devices via respective add/drop multiplexers, at least one of the add/drop multiplexers being assigned an optical wavelength that differs from the optical wavelength assigned to any other add/drop multiplexer; and

a demultiplexer capable of receiving optical signals having at least one of the plurality of predetermined optical wavelengths from the network bus and thereafter wavelength division demultiplexing the optical signals into a plurality of output optical signals.

8. (Original) A transceiver according to Claim 7, wherein said plurality of optical sources are capable of communicating with a network controller, wherein the network controller

is capable of transmitting the plurality of input electrical signals to said plurality of optical sources.

9. (Original) A transceiver according to Claim 7 further comprising a plurality of optical detectors capable of receiving the plurality of output optical signals from said demultiplexer and thereafter generating a plurality of output electrical signals from the plurality of output optical signals.

10. (Original) A transceiver according to Claim 9, wherein the plurality of optical detectors of said receiving element are capable of transmitting the plurality of output electrical signals to a network controller.

11. (Original) A transceiver according to Claim 7, wherein plurality of remote devices read and write optical signals having predefined optical wavelengths that are associated with the plurality of predetermined optical wavelengths of the optical input signals.

12. (Currently Amended) A method of transmitting a plurality of optical signals over a multi-mode network bus in a closed-loop network system, said method comprising the steps of:

transmitting a plurality of input optical signals via the network bus, wherein transmitting comprises wavelength division multiplexing the plurality of input optical signals for transmission via the network bus such that the plurality of input optical signals have a plurality of predetermined optical wavelengths;

communicating with a plurality of remote devices via a plurality of add/drop multiplexers that are optically connected to the network bus and respective remote devices, wherein said communicating comprises reading optical signals having respective predefined optical wavelengths off of the network bus, at least one of the add/drop multiplexers being assigned an optical wavelength that differs from the optical wavelength assigned to any other add/drop multiplexer; and

receiving optical signals having at least one of the plurality of predetermined optical wavelengths from the network bus and thereafter wavelength division demultiplexing the optical signals into a plurality of output optical signals.

13. (Original) A method according to Claim 12, wherein communicating further comprises writing optical signals having respective predefined optical wavelengths onto the network bus.

14. (Original) A method according to Claim 13, wherein writing optical signals comprises writing optical signals having respective predefined optical wavelengths that are at least a subset of the plurality of predetermined optical wavelengths of the optical input signals.

15. (Original) A method according to Claim 12 further comprising generating the plurality of input optical signals from a plurality of input electrical signals, wherein said generating occurs before transmitting the plurality of input optical signals.

16. (Original) A method according to Claim 15 further comprising producing the plurality of input electrical signals before generating the plurality of input optical signals.

17. (Original) A method according to Claim 12, wherein receiving further comprises generating a plurality of output electrical signals from the plurality of output optical signals after wavelength division demultiplexing the composite optical signal.

18. (Original) A method according to Claim 17, wherein generating the plurality of output electrical signals further comprises transmitting the plurality of output optical signals to a network controller after generating the output electrical signals.

19. (Original) A method according to Claim 12, wherein communicating comprises reading optical signals having a plurality of predefined optical wavelengths that are at least a subset of the plurality of predetermined optical wavelengths of the optical input signals.

20. (Original) A method according to Claim 12, wherein receiving the optical signals comprises receiving the optical signals after transmission about a closed loop on the network bus from a transmitter to a receiver.

21. (Currently Amended) A vehicle adapted to support optical communications comprising:

a vehicle body; and

a closed-looped optical network system comprising:

a multi-mode network bus disposed at least partially throughout said vehicle body for transmitting a plurality of optical signals;

a multiplexer capable of wavelength division multiplexing a plurality of input optical signals for transmission via the network bus, wherein the plurality of input optical signals have a plurality of predetermined optical wavelengths;

a plurality of ~~remote devices~~ add/drop multiplexers optically connected to the network bus and a plurality of remote devices that are disposed at least partially throughout said vehicle body, wherein said plurality of remote devices are capable of reading optical signals having respective predefined optical wavelengths off of the network bus via respective add/drop multiplexers, ~~and~~ wherein said plurality of remote devices are further capable of writing optical signals having respective predefined optical wavelengths onto the network bus via respective add/drop multiplexers, and wherein at least one of the add/drop multiplexers is assigned an optical wavelength that differs from the optical wavelength assigned to any other add/drop multiplexer; and

a demultiplexer capable of receiving optical signals having at least one of the plurality of predetermined optical wavelengths from the network bus and thereafter

wavelength division demultiplexing the optical signals into a plurality of output optical signals.

22. (Original) A vehicle according to Claim 21, wherein said closed-loop optical network system further comprises a plurality of optical sources capable of generating the plurality of input optical signals from a plurality of input electrical signals.

23. (Original) A vehicle according to Claim 22, wherein said closed-loop optical network system further comprises a network controller for at least partially controlling communications on the network bus within said vehicle body, wherein said network controller is capable of transmitting the plurality of input electrical signals to said plurality of optical sources.

24. (Original) A vehicle according to Claim 21, wherein said closed-loop optical network system further comprises a plurality of optical detectors capable of receiving the plurality of output optical signals from said demultiplexer and thereafter generating a plurality of output electrical signals from the plurality of output optical signals.

25. (Original) A vehicle according to Claim 24, wherein the plurality of optical detectors of said closed-loop optical network system are capable of transmitting the plurality of output electrical signals to a network controller.

26. (Original) A vehicle according to Claim 21, wherein the plurality of remote devices of said closed-loop optical network system read and write optical signals having respective predefined optical wavelengths that are at least subsets of the plurality of predetermined optical wavelengths of the optical input signals.